CLAIMS

We claim:

1. A targeting construct comprising:

   (a) a first polynucleotide sequence homologous to at least a first portion of a PKDL2 gene;

   (b) a second polynucleotide sequence homologous to at least a second portion of the PKDL2 gene; and

   (c) a selectable marker.

2. A method of producing a targeting construct, the method comprising:

   (a) providing a first polynucleotide sequence homologous to at least a first portion of a PKDL2 gene;

   (b) providing a second polynucleotide sequence homologous to at least a second portion of the PKDL2 gene;

   (c) providing a selectable marker; and

   (d) inserting the first sequence, second sequence, and selectable marker into a vector to produce the targeting construct.

3. A cell comprising a disruption in a PKDL2 gene.
4. The cell of claim 3, wherein the cell is a murine cell.
5. The cell of claim 4, wherein the murine cell is an embryonic stem cell.
6. A non-human transgenic animal comprising a disruption in a PKDL2 gene.
7. The non-human transgenic animal of claim 6, wherein the transgenic animal is a mouse.
8. A cell derived from the transgenic mouse of claim 7.
9. A method of producing a transgenic mouse comprising a disruption in a PKDL2 gene, the method comprising:

   (a) introducing the targeting construct of claim 1 into a cell;

   (b) introducing the cell into a blastocyst;

   (c) implanting the resulting blastocyst into a pseudopregnant mouse, wherein said pseudopregnant mouse gives birth to a chimeric mouse; and

   (d) breeding the chimeric mouse to produce the transgenic mouse.

10. A method of identifying an agent that modulates the expression or function of a PKDL2 gene, the method comprising:

(a) providing a non-human transgenic animal comprising a disruption in the PKDL2 gene;

(b) administering the agent to the non-human transgenic animal; and

(c) determining whether the expression or function of the disrupted PKDL2 gene in the non-human transgenic animal is modulated.

11. A method of identifying an agent that modulates the expression or function of a PKDL2 gene, the method comprising:

(a) providing a cell comprising a disruption in the PKDL2 gene;

(b) contacting the cell with the agent; and

(c) determining whether the expression or function of the PKDL2 gene is modulated.

12. The method of claim 11, wherein the cell is derived from the non-human transgenic animal of claim 6.

13. An agent identified by the method of claim 10 or claim 11.

14. A transgenic mouse comprising a disruption in a PKDL2 gene, wherein there is no significant expression of the PKDL2 gene in the transgenic mouse.

15. A cell derived from the transgenic mouse of claim 14.

16. A transgenic mouse comprising a disruption in a PKDL2 gene, wherein the transgenic mouse exhibits a behavioral abnormality, relative to a wild-type control mouse.

17. The transgenic mouse of claim 16, wherein the behavioral abnormality is increased activity.

18. The transgenic mouse of claim 17, wherein the increased activity is hyperactivity.

19. The transgenic mouse of claim 17, wherein the increased activity is characterized by increased total distance traveled in an open field test.

20. A method of identifying an agent that ameliorates a phenotype associated with a disruption in a PKDL2 gene, the method comprising:

(a) administering an agent to a transgenic mouse comprising a disruption in the PKDL2 gene; and

(b) determining whether the agent ameliorates the phenotype.

21. The method of claim 20, wherein the phenotype is hyperactivity.

22. An agent identified by the method of claim 10.

23. An agonist or antagonist of PKDL2.

24. Phenotypic data associated with a transgenic mouse comprising a disruption in a PKDL2 gene, wherein the phenotypic data is in an electronic database.